REMARKS / DISCUSSION OF ISSUES

The present amendment is submitted in response to the Final Office Action mailed May 26, 2011. In view of the amendments above and remarks to follow, reconsideration and allowance of this application are respectfully requested

Status of Claims

Upon entry of the present amendment, claims 1-18 and 20-28 will remain pending in this application. Claims 1 and 18 have been amended. Applicants respectfully submit that no new matter is added by the present amendments. In light of the above amendments and the following remarks, Applicants respectfully submit that all presently pending claims are in condition for allowance.

Double Patenting

Claims 1-18 and 20-28 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 and 20-27 of copending Application No. 10/574,142. The Applicants acknowledge this **provisional** rejection and will address the rejection if the claims of the applications are deemed allowable and remain subject of a non-provisional double patenting rejection.

Claim Rejections under 35 USC §102

I. In the Office Action, Claims 1, 2, 5, 8, 13-18 and 23-28 stand rejected under 35 U.S.C. §102 (e) as being anticipated by U.S. Patent No. 6,593,904 ("Marz"). Applicants traverse the rejections.

Claims 1, 2, 5, 8, 13-18 and 23-28 are allowable

In order to maintain a rejection based on anticipation or obviousness, the prior art in combination must show all of the claimed limitations, See, e.g., M.P.E.P. §706.02; §2141. Applicants respectfully submit that Marz does not show all of the claim limitations of independent claims 1 and 18 and that claims 1, 2, 5, 8, 13-18 and 23-28 are allowable over Marz for at least the following reasons.

Independent Claim 1 has been amended herein to clarify its recitations over Marz. Claim 1 now recites limitations and/or features which are not disclosed by Marz. Therefore, the cited portions of Marz do not anticipate claim 1, because the cited portions of Marz do not teach every element of claim 1. For example, the cited portions of Marz do not disclose or suggest, "*THE SEPARATELY ADDRESSABLE PIXELS BEING GROUPED INTO A PLURALITY OF GROUPS SUCH THAT DIFFERENT PIXELS WITHIN A GROUP CORRESPOND TO SAID PLURALITY OF DIFFERENT VIEWS OF THE OVERALL THREE DIMENSIONAL IMAGE,*"

The elements of claim 1 are reproduced in clean form as follows:

> 1. A display device, comprising:
> a display panel having a plurality of separately addressable pixels for displaying an overall three dimensional image, the overall three dimensional image being comprised of a number of different views as determined by a particular viewing angle, each view corresponding to one of a plurality of different first viewing angles with respect to a first axis,
> the separately addressable pixels being grouped into a plurality of groups such that different pixels within a group correspond to said plurality of different views of the overall three dimensional image,
> each pixel group including a number of pixels corresponding to a number of the different views of the three dimensional image, wherein each pixel of each group corresponds to one of the plurality of different views of the three dimensional image,
> a display driver for controlling an optical characteristic of each pixel to generate an image according to received image data; and
> a colour compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is varied according to a pixel position within the group. [Emphasis Added]

The Office Action on page 4, cites Marz, col. 6, lines 43-59, for allegedly teaching, "*wherein all the pixels in the plurality of groups correspond to one of the views, display the different image of the one of the views.*" It is respectfully submitted that Marz does not teach, disclose or suggest the asserted claim limitation.

Marz describes at col. 4, lines 5-25, with respect to Fig. 1, an example of the configuration of an active matrix liquid crystal display without the associated control electronics. The active matrix liquid crystal display having liquid crystal cells is shown to **be arranged in rows and columns**. One side of the liquid crystal cells is in contact with a common reference potential and it being possible to switch gray-scale signals through on the other side. Controllable switches 4 are connected row-by-row to row electrodes 6 via their gate electrodes. Together with counter-electrode 7 and a liquid crystal bed 8 under it, which is common to all pixel electrodes 3, each light-transmitting pixel electrode 3 forms an activatable liquid crystal cell 9, **resulting in a row and column-shaped arrangement of liquid crystal cells 9.** The layer with liquid crystal cells 9 is covered by a top glass plate 10, to which an additional polarization film 11 is applied. To display color images, red, green and blue color filter strips 12, 13 and 14 are arranged alternately column-by-column between liquid crystal cells 9 and top glass plate 11.

The active matrix liquid crystal display of Marz has an adjustment device for variably adjusting the difference in potential between the potential level of the gray-scale signals and the reference potential for at least a part of the columns. **Changing the potential difference changes the viewing angle range within which the image displayed on the active matrix liquid crystal display is visible to the observer. To be able to display different images for different viewing angle ranges in an advantageous manner, a column control unit outputs the gray-scale signals of at least two different images interleaved chronologically in sequence to the column electrodes and the adjustment device sets different potential differences in sequence for the various images.** For example, Marz describes in the embodiment shown in FIG. 8, image signals 32 and 33 from two different image signal sources 34 and 35 which are supplied to active matrix liquid crystal display 30 shown in FIG. 4 or 6 via a controllable switchover device 31 which is a component of column control unit 18. Switchover device 31 is controlled by an adjustment device 36 with a periodically alternating switchover signal 37. Simultaneously, **adjustment device 36 supplies two reference potentials,**

which alternate synchronously with switchover signal 37, to counter-electrode 7 of active matrix liquid crystal display 30 via a signal link 38. Images 39 and 40 generated on the basis of image signals 32 and 33 from active matrix liquid crystal display 30 are therefore displayed separately in different viewing angle ranges.

In the alternative embodiment shown in FIG. 9, the different image signals 32 and 33 of image signal sources 34 and 35 are supplied to active matrix liquid crystal display 30 via a signal processing device 41 which is a component of column control unit 18. **Signal processing device 41 interleaves image signals 32 and 33 column-by-column so that gray-scale values 20 belonging to different images are supplied to adjacent column electrodes 5.** Simultaneously, an adjustment device 42 generates two different offset voltages or offset values 43 and 44 and supplies them to active matrix liquid crystal display 30 where, interleaved column-by-column, they are superimposed on gray-scale signals 20 output to column electrodes 5. Images 45 and 46 generated by active matrix liquid crystal display 30 on the basis of image signals 32 and 33 are therefore displayed interleaved column-by-column in different viewing angle ranges.

In other words, Marz merely shows a capability for displaying different images for different viewing angle ranges by a column control unit outputting the gray-scale signals of at least two different images **interleaved chronologically in sequence to the column electrodes and the adjustment device sets different potential differences in sequence for the various images.** And in an alternative embodiment of the active matrix liquid crystal display of Marz, the column control unit outputs the gray-scale signals of at least two different images interleaved simultaneously column-by-column to the column electrodes and the adjustment device setting different potential differences at the column electrodes each assigned to different images.

In contrast to what is asserted in the Office Action, the column electrodes of Marz are not grouped into a plurality of groups, **where each pixel in a group corresponds to one of the plurality of different views of the three dimensional image**, as claimed. On the contrary, each pixel in a column (group) of the liquid crystal display of Marz

corresponds to a single view from among the different views. Stated alternatively, each pixel in a column of Marz does not correspond to one of the plurality of different views.

In contrast to Marz, the invention uses a display panel 15 having a plurality of separately addressable pixels 1....10 in which the pixels are grouped so that the different pixels 1...5 or 6....10 respectively in a group 16_1 and 16_2 correspond to different views of the image. (i.e., *THE SEPARATELY ADDRESSABLE PIXELS BEING GROUPED INTO A PLURALITY OF GROUPS SUCH THAT DIFFERENT PIXELS WITHIN A GROUP CORRESPOND TO SAID PLURALITY OF DIFFERENT VIEWS OF THE OVERALL THREE DIMENSIONAL IMAGE*). For example, in the arrangement shown in Fig. 6, the width of each lens element is chosen to be eight pixels, corresponding to an eight-view 3D display. The light rays emitted from pixels a_2 and a_4 are shown. The rays emitted by pixel a_2 propagate to a large extent obliquely with respect to the rays emitted by pixel a4. The angle between them is, on average, approximately equal to the angle between the two views. See Applicant's published specification, page 11, lines 1-10. As described, particular pixels within a group are dedicated to particular views from among the eight-view display. For example, pixel a_2 from group 116_1 is dedicated to view 1 and pixel a_4 from that same group 116_1 is dedicated to a different view than view 1 (e.g., view 2). The column electrodes in Marz are not grouped in the manner described above. Further, particular pixels in Marz are not dedicated to particular views. Instead, the same pixels are used in a multiplexed manner in concert with an adjustment device to produce the different views.

Independent Claim 1 has been further amended herein to further clarify its recitations over Marz. Claim 1 now recites further limitations and/or features which are not disclosed by Marz. Therefore, the cited portions of Marz do not anticipate claim 1, because the cited portions of Marz do not teach every element of claim 1. For example, the cited portions of Marz do not disclose or suggest,

> a colour compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis,

> wherein a correction applied to each of the plurality of pixels within the group is **varied according to a pixel position within the group.** [Emphasis Added]

Applicant's specification discloses at pages 7-8 that the present invention provides a colour compensation device that controls the optical characteristic of each pixel 0...7 in a group 16 so as to compensate for the viewing angle. Thus, a colour correction factor applied to each red pixel in group 16_R will be varied according to pixel position 0...7 within the group, as more precisely claimed. ....The colour compensation device preferably substantially normalizes a colour displayed by a group of pixels to that of the other groups of pixels for a given location or colour cluster in the display panel. The colour rendering thereby becomes independent of the viewing angle.

Based on the foregoing, it is respectfully submitted that the display device of claim 1 is not anticipated or made obvious by the teachings of Marz. Accordingly, the Applicants respectfully submit that independent claim 1 is patentable over Marz and claims 1, 2, 5, 8, 13-17 are allowable, at least by virtue of their respective dependence from claim 1.

Independent Claims 18 recites similar subject matter as Independent Claim 1 and therefore contains the limitations of Claim 1. Hence, for at least the same reasons given for Claim 1, Claim 18 is believed to recite statutory subject matter under 35 USC 102(e). Claims 23-28 are allowable, at least by virtue of their respective dependence from claim 18.

Claim Rejections under 35 USC 103

I. The Office has rejected claims 3, 4, 9, 12 and 20 under 35 U.S.C. §103(a) as being unpatentable over Marz in view of U.S. Patent No. 6,344,837 ("Gelsey"). Applicants respectfully traverse the rejections.

Claims 3, 4, 9, 12 and 20 are allowable

As explained above, the cited portions of Marz do not disclose or suggest each and every element of independent claims 1 and 18 from which claim {3, 4, 9, 12} and {20-22} respectively depend. Gelsey does not disclose each of the elements of claims 1 and 18 that are not disclosed by Marz. For example, the cited portions of Gelsey fail to disclose or suggest,

> 1. A display panel having a plurality of separately addressable pixels for displaying an overall three dimensional image, the overall three dimensional image being comprised of a number of different views as determined by a particular viewing angle, each view corresponding to one of a plurality of different first viewing angles with respect to a first axis,
>
> the separately addressable pixels being grouped into a plurality of groups such that different pixels within a group correspond to said plurality of different views of the overall three dimensional image,
>
> each pixel group including a number of pixels corresponding to a number of the different views of the three dimensional image, wherein each pixel of each group corresponds to one of the plurality of different views of the three dimensional image,
>
> a display driver for controlling an optical characteristic of each pixel to generate an image according to received image data; and
>
> a colour compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is varied according to a pixel position within the group. [Emphasis Added]

Gelsey is merely cited for teaching a three dimensional display having a plurality of point sources of illumination.

Hence claims 1 and 18 are allowable and claims {3, 4, 9, 12} and {20-22}are allowable, at least by virtue of their respective dependence from claims 1 and 18.

II. The Office has rejected claims 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over Marz in view of U.S. Patent Application No. 2001/0028356 ("Balogh"). Applicants respectfully traverse the rejections.

Claims 6 and 7 are *allowable*

As explained above, the cited portions of Marz do not disclose or suggest each and every element of independent claims 1 from which claim 6 and 7 depend. Balogh does not disclose each of the elements of claim 1 that are not disclosed by Marz. For example, the cited portions of Balogh fail to disclose or suggest,

> 1. A display panel having a plurality of separately addressable pixels for displaying an overall three dimensional image, the overall three dimensional image being comprised of a number of different views as determined by a particular viewing angle, each view corresponding to one of a plurality of different first viewing angles with respect to a first axis,
>
> the separately addressable pixels being grouped into a plurality of groups such that different pixels within a group correspond to said plurality of different views of the overall three dimensional image,
>
> each pixel group including a number of pixels corresponding to a number of the different views of the three dimensional image, wherein each pixel of each group corresponds to one of the plurality of different views of the three dimensional image,
>
> a display driver for controlling an optical characteristic of each pixel to generate an image according to received image data; and
>
> a colour compensation device for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is varied according to a pixel position within the group. [Emphasis Added]

Balogh is merely cited for teaching a lenticular array positioned adjacent to the display panel, each lenticel with the lenticular array focusing light from selected pixels in the display panel.

Hence claim 1 is allowable and claims 6 and 7 are allowable, at least by virtue of their respective dependence from claim 1.

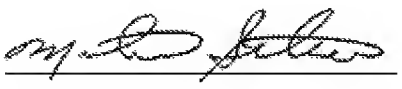
It is respectfully submitted that the amendments to the claims present no new issues requiring further search as the subject matter presented by the amended claims is unchanged by these amendments. No new search is necessitated by these amendments which place the claims in better condition for allowance and/or consolidate and reduce issues that may be pending thereafter for appeal. Accordingly, consideration and entrance of the amendments is respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-18 and 20-28 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-333-9643.

Respectfully submitted,



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